Astronomische Nachrichten 2018 vol.339 N5, pages 391-396

Testing the nonlinearity of the Moravian Instruments G4-16000 CCD camera

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2018 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim In this paper, we present the results of characterizing the properties of the Moravian Instruments G4-16000 CCD cameras, based on the Kodak KAF-16803 chip. Such cameras are widely used in several robotic telescope projects, as well as by amateurs. We demonstrate both large light response nonlinearity (up to tens of percents) and significant bias level instability of these cameras, and outline possible ways of overcoming these problems.

http://dx.doi.org/10.1002/asna.201813512

Keywords

instrumentation: Detectors, methods: Laboratory, techniques: Photometric

References

[1] Acharya, B. S., Actis, M., Aghajani, T., et al. 2013, March, Astropart. Phys., 43, 3. https://doi.org/10.1016/j.astropartphys.2013.01.007

[2] Cagas, P. 2018, private communication

[3] Janeček, P., Ebr, J., Blažek, J., Prouza, M., Mašek, M., & Eliašek, J. 2017, January, in: FRAM for the Cherenkov Telescope Array: an update. Atmospheric Monitoring for High Energy Astroparticle Detectors (AtmoHEAD) 2016. Olomouc, Czech Republic, eds. P. Travniček, M. Prouza, M. Gaug, B. Keilhauer, EPJ Web Conf., Volume 144, id.01012, Vol. 144. https://doi.org/10.1051/epjconf/201714401012

[4] Kubánek, P., Jelinek, M., Nekola, M., et al. 2004, September, in: Gamma-Ray Bursts: 30 Years of Discovery, eds. E. Fenimore & M. Galassi, American Institute of Physics (AIP) Publishing Center, Melville, New York, Vol. 727, 753. https://doi.org/10.1063/1.1810951

[5] Moravian Instruments. 2018, Large format G4–9000 and G4–16000 cooled CCD cameras., http://www.gxccd.com/art?id=383%26cat=1%26lang=409

[6] Prouza, M., Jelinek, M., Kubánek, P., Ebr, J., Travniček, P., & Šmida, R. 2010, Adv. Astron., 2010, 849382. https://doi.org/10.1155/2010/849382

[7] The Pierre Auger Collaboration 2015, October, Nucl. Instrum. Methods Phys. Res. Sect. A Accelerat. Spectrom. Detect. Assoc. Equip., 798, 172. https://doi.org/10.1016/j.nima.2015.06.058